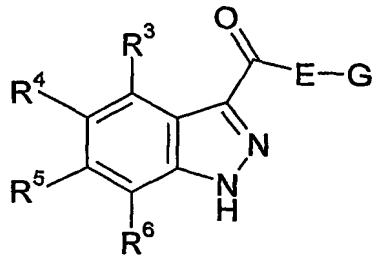
CLAIMS

1. A compound of the formula (I):



(I)

wherein

E is O, S or NH;

G is selected from hydrogen; carbocyclic and heterocyclic groups having from 3 to 12 ring members; and acyclic C_{1-8} hydrocarbyl groups optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the acyclic C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$; provided that E-G is not OH or SH and further provided that E-G does not contain the group O-O;

two adjacent moieties selected from R^3, R^4, R^5 and R^6, together with the carbon atoms to which they are attached, form a fused heterocyclic group having from 5 to 7 ring members and 1, 2 or 3 ring heteroatoms selected from N, O and S; and the other two moieties selected from R^3, R^4, R^5 and R^6 are the same or different and are each selected from hydrogen, halogen, hydroxy, trifluoromethyl, cyano, nitro, carboxy, amino, carbocyclic and heterocyclic groups having from 3 to 12 ring members; a group R^a-R^b wherein R^a is a bond, O, CO, $X^1C(X^2)$, $C(X^2)X^1$, $X^1C(X^2)X^1$, S, SO, SO_2, NR^c, SO_2NR^c or NR^cSO_2; and R^b is selected from hydrogen, carbocyclic and heterocyclic groups having from 3 to 12 ring members, and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents

selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$;

R^c is hydrogen or C_{1-4} hydrocarbyl; and

X^1 is O, S or NR^c and X^2 is =O, =S or =NR^c.

2. A compound according to claim 1 wherein R^3 and R^4, together with the carbon atoms to which they are attached, form a fused heterocyclic group.

3. A compound according to claim 1 or claim 2 wherein the fused heterocyclic ring is substituted by one or more groups R^{10} selected from halogen, hydroxy, trifluoromethyl, cyano, nitro, carboxy, amino, carbocyclic and heterocyclic groups having from 3 to 12 ring members; a group R^a-R^b wherein R^a is a bond, O, CO, $X^1C(X^2)$, $C(X^2)X^1$, $X^1C(X^2)X^1$, S, SO, SO_2, NR^c, SO_2NR^c or NR^cSO_2; and R^b is selected from hydrogen, carbocyclic and heterocyclic groups having from 3 to 7 ring members, and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$;

R^c is selected from hydrogen and C_{1-4} hydrocarbyl; and

X^1 is O, S or NR^c and X^2 is =O, =S or =NR^c.

4. A compound according to claim 3 wherein R^{10} is selected from halogen, hydroxy, trifluoromethyl, cyano, nitro, carboxy, amino, monocyclic carbocyclic and heterocyclic groups having from 3 to 7 ring members, a group R^a-R^b wherein R^a is a bond, O, CO, $X^1C(X^2)$, $C(X^2)X^1$, $X^1C(X^2)X^1$, S, SO, SO_2, NR^c, SO_2NR^c or NR^cSO_2; and R^b is selected from hydrogen and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents

selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$; and R^c, X^1 and X^2 are as hereinbefore defined.

5. A compound according to claim 4 wherein the substituents R^{10} on the fused heterocyclic ring are selected from amino, mono or di-C_{1-4} hydrocarbylamino, C_{1-4} hydrocarbyl optionally substituted by hydroxyl or amino, and N-linked monocyclic heterocyclic groups containing 1, 2 or 3 heteroatoms selected from N, O and S.

6. A compound according to claim 5 wherein the substituents R^{10} are selected from amino, methylamino, ethylamino, cyclopropylamino, methyl, ethyl, hydroxymethyl, hydroxyethyl, N-pyrrolidinyl and N-imidazolyl.

7. A compound according to any one of the preceding claims wherein the other two groups R^3 to R^6 not forming part of the fused heterocyclic ring are selected from hydrogen, halogen, hydroxy, cyano, methyl, ethyl, cyclopropyl, trifluoromethyl, or amino.

8. A compound according to claim 7wherein the said groups are selected from hydrogen, methyl, fluorine or chlorine.

9. A compound according to claim 8 wherein the said groups are each hydrogen.

10. A compound according to any one of the preceding claims wherein the fused heterocyclic group is aromatic.

11. A compound according to any one of the preceding claims wherein the fused heterocyclic group is a five or six membered ring, preferably a five membered ring.

12. A compound according to claim 11 wherein the fused ring is selected from thiazolo, isothiazolo, oxazolo, isoxazolo, pyrrolo, pyrido, thieno, furano, pyrimido, pyrazolo, pyrazino, and imidazolo fused rings.

13. A compound according to claim 12 wherein the fused ring is selected from thiazolo, oxazolo, imidazolo and pyrido.

14. A compound according to claim 13 wherein the fused ring is thiazolo.

15. A compound according to any one of the preceding claims wherein E is selected from O and NH.

16. A compound according to claim 15 wherein E is NH.

17. A compound according to any one of the preceding claims wherein G is selected from hydrogen; monocyclic carbocyclic and heterocyclic groups having 5 or 6 ring members; and acyclic C_{1-4} hydrocarbyl groups optionally substituted by one or more substituents selected from hydroxy, , halogen, amino, mono- or di-C_{1-4} hydrocarbylamino, and monocyclic carbocyclic and heterocyclic groups having 5 or 6 ring members; provided that E-G is not OH or SH.

18. A compound according to any one of the preceding claims wherein G is selected from carbocyclic and heterocyclic groups.

19. A compound according to claim 18 wherein G is selected from monocyclic carbocyclic and heterocyclic groups having 5 or 6 ring members.

20. A compound according to claim 18 or claim 19 wherein G is an aryl or heteroaryl group.

21. A compound according to claim 20 wherein the group G is selected from phenyl, naphthyl, pyridyl, pyrrolyl, furanyl, thiophenyl, imidazolyl, oxazolyl, oxadiazolyl, oxatriazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, pyrazinyl, pyrimidinyl, pyridazinyl, triazinyl, triazolyl, tetrazolyl,

quinolinyl, isoquinolinyl, benzfuranyl, benzthiophenyl, chromanyl, thiochromanyl, benzimidazolyl, benzoxazolyl, benzisoxazole, benzthiazolyl and benzisothiazole, isobenzofuranyl, isoindolyl, indolizinyl, indolinyl, isoindolinyl, purinyl (e.g., adenine, guanine), indazolyl, benzodioxolyl, chromenyl, isochromenyl, isochromanyl, benzodioxanyl, quinolizinyl, benzoxazinyl, benzodiazinyl, pyridopyridinyl, quinoxalinyl, quinazolinyl, cinnolinyl, phthalazinyl, naphthyridinyl and pteridinyl.

22. A compound according to claim 21 wherein G is selected from phenyl, imidazolyl, pyridyl and isoxazole groups.

23. A compound according to claim 22 wherein G is a phenyl group.

24. A compound according to claim 18 or claim 19 wherein G is a non-aromatic carbocyclic group such as cyclohexyl or cyclopentyl.

25. A compound according to claim 18 or claim 19 wherein G is a non-aromatic heterocyclic group.

26. A compound according to claim 25 wherein the non-aromatic heterocyclic group is selected from morpholine, piperidine (e.g. 4-piperidinyl and 3-piperidinyl), pyrrolidine (e.g. 3-pyrrolidinyl and 2-pyrrolidinyl), pyrrolidone, tetrahydrofuran, tetrahydrothiophene, dioxan, tetrahydropyran (e.g. 4-tetrahydro pyranyl), imidazoline, imidazolidinone, oxazoline, thiazoline, piperazine, and N-alkyl piperazines such as N-methyl piperazine.

27. A compound according to claim 26 wherein the non-aromatic group is selected from tetrahydropyran, morpholine, piperazine, piperidine and pyrrolidine.

28. A compound according to any one of the preceding claims wherein G is an unsubstituted carbocyclic or heterocyclic group.

29. A compound according to any one of claims 1 to 27 wherein G is a carbocyclic or heterocyclic group substituted by one or more substituent

groups R^{10} selected from halogen, hydroxy, trifluoromethyl, cyano, nitro, carboxy, amino, carbocyclic and heterocyclic groups having from 3 to 12 ring members; a group R^a-R^b wherein R^a is a bond, O, CO, $X^1C(X^2)$, $C(X^2)X^1$, $X^1C(X^2)X^1$, S, SO, SO_2, NR^c, SO_2NR^c or NR^cSO_2; and R^b is selected from hydrogen, carbocyclic and heterocyclic groups having from 3 to 7 ring members, and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$;
R^c is selected from hydrogen and C_{1-4} hydrocarbyl; and
X^1 is O, S or NR^c and X^2 is =O, =S or $=NR^c$.

30. A compound according to any one of claims 1 to 16 wherein G is an acyclic C_{1-8} hydrocarbyl group optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the acyclic C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$.

31. A compound according to claim 30 wherein the group G is an acyclic C_{1-8} hydrocarbyl group optionally substituted by one or more carbocyclic and heterocyclic groups having from 3 to 12 ring members.

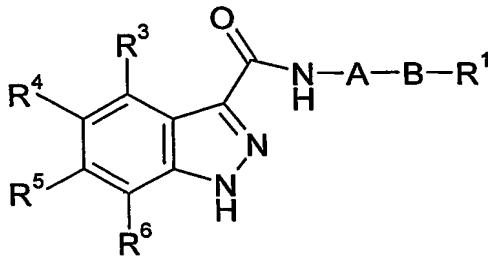
32. A compound according to claim 31 wherein the said carbocyclic and heterocyclic groups are unsubstituted.

33. A compound according to claim 31 wherein the said carbocyclic and heterocyclic groups are substituted with one or more groups R^{10} as defined in claim 29.

34. A compound according to any one of claims 30 to 33 wherein the optionally substituted acyclic C_{1-8} hydrocarbyl group is a C_{1-6} hydrocarbyl group, e.g. a C_{1-4} hydrocarbyl group such as a C_1, C_2 or C_3 hydrocarbyl group.

35. A compound according to any one of the preceding claims wherein E-G is any one of the groups set forth in Table 1 herein.

36. A compound of the formula (II):



(II)

wherein

A is a group R^2 or CH_2-R^2 where R^2 is a carbocyclic or heterocyclic group having from 3 to 12 ring members;

B is a bond or an acyclic linker group having a linking chain length of up to 3 atoms selected from C, N, S and O;

R^1 is hydrogen or a group selected from SO_2R^b, $SO_2NR^7R^8$, $CONR^7R^8$, NR^7R^9 and carbocyclic and heterocyclic groups having from 3 to 7 ring members;

R^3 and R^4 together with the carbon atoms to which they are attached form a fused heterocyclic group having from 5 to 7 ring members and 1, 2 or 3 ring heteroatoms selected from N, O and S;

R^5 and R^6 are the same or different and are each selected from hydrogen, halogen, hydroxy, trifluoromethyl, cyano, nitro, carboxy, amino, carbocyclic and heterocyclic groups having from 3 to 12 ring members; a group R^a-R^b wherein R^a is a bond, O, CO, $X^1C(X^2)$, $C(X^2)X^1$, $X^1C(X^2)X^1$, S, SO, SO_2, NR^c, SO_2NR^c or NR^cSO_2; and R^b is selected from hydrogen,

carbocyclic and heterocyclic groups having from 3 to 12 ring members, and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$;

R^c and R^d are the same or different and each is hydrogen or C_{1-4} hydrocarbyl;

X^1 is O, S or NR^c and X^2 is =O, =S or $=NR^c$;

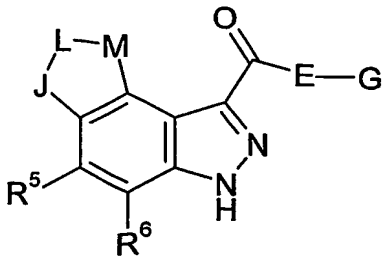
R^7 is selected from hydrogen and a C_{1-8} hydrocarbyl group optionally substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, nitro, amino, mono- or di-C_{1-4} hydrocarbylamino, carbocyclic and heterocyclic groups having from 3 to 12 ring members and wherein one or more carbon atoms of the C_{1-8} hydrocarbyl group may optionally be replaced by O, S, SO, SO_2, NR^c, $X^1C(X^2)$, $C(X^2)X^1$ or $X^1C(X^2)X^1$;

R^8 is selected from R^7 and carbocyclic and heterocyclic groups having from 3 to 12 ring members;

R^9 is selected from R^8, COR^8 and SO_2R^8;

or NR^7R^8 or NR^7R^9 may each form a heterocyclic group having from 5 to 12 ring members.

37. A compound of the formula (III):



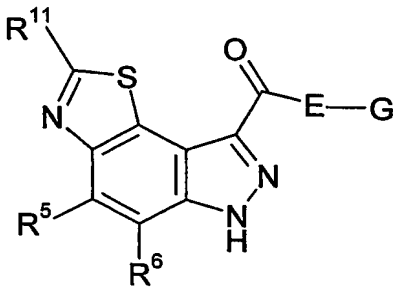
(III)

in which J, L and M are each independently selected from =N-, -S-, -O- and =CR^{11}, R^{11} is hydrogen or a group R^{10} wherein R^5, R^6, R^{10}, E and G are as defined in any one of the preceding claims.

38. A compound according to claim 37 wherein at least one of J, L and M is other than a nitrogen atom.

39. A compound according to claim 37 or claim 38 wherein at least one of J, L and M is =CR^{11}.

40. A compound according to claim 37 represented by the formula (IV):



(IV)

41. A compound according to claim 40 wherein R^5 and R^6 are hydrogen or a small substituent selected from halogen, hydroxy, cyano, methyl, ethyl, trifluoromethyl, or amino.

42. A compound according to claim 41 wherein wherein R^5 and R^6 are hydrogen.

43. A compound according to any one of claims 40 to 42 wherein E-G is any one of the groups A to AI listed in Table 1.

44. A compound according to any one of claims 40 to 43 wherein R^{11} is selected from hydrogen, halogen, hydroxy, trifluoromethyl, cyano, amino, mono-C_{1-4} alkylamino or di-C_{1-4} alkylamino, carbocyclic and heterocyclic groups having 5 to 7 ring members; and C_{1-4} hydrocarbyl groups optionally

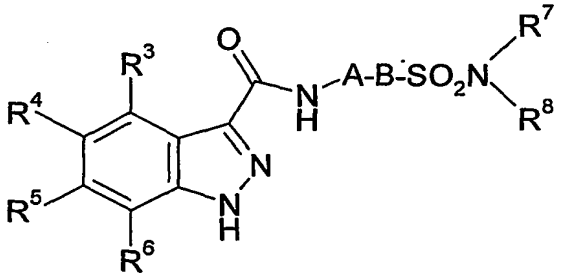
substituted by one or more substituents selected from hydroxy, oxo, halogen, cyano, amino, and mono- or di-C_{1-4} hydrocarbylamino.

45. A compound according to claim 44 wherein R^{11} is selected from amino, mono-C_{1-4} alkylamino or di-C_{1-4} alkylamino, heterocyclic groups having 5 to 6 ring members and containing up to 2 heteroatoms selected from N, O and S; and C_{1-4} hydrocarbyl groups optionally substituted by one or more substituents selected from hydroxy, halogen, amino, and mono- or di-C_{1-4} hydrocarbylamino.

46. A compound according to claim 45 wherein R^{11} is selected from amino, methylamino, ethylamino, cyclopropylamino, methyl, ethyl, hydroxyethyl and pyrrolyl.

47. A compound according to any one of claims 1 and 3 to 35, wherein R^5 and R^6 together with the carbon atoms to which they are attached form a fused heterocyclic group having from 5 to 7 ring members and 1, 2 or 3 ring heteroatoms selected from N, O and S.

48. A compound of the formula (V):



(V)

wherein R^3 to R^8, A and B are as defined in any one of the preceding claims.

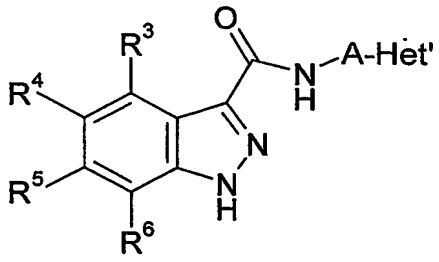
49. A compound according to claim 48 wherein A is a group R^2 wherein R^2 is an aryl group having six ring members and B is a bond or a methylene group.

50. A compound according to claim 48 or claim 49 wherein R^7 and R^8 are selected from hydrogen and C_{1-4} alkyl or R^7 and R^8 together with the nitrogen atom form a saturated five or six membered heterocyclic ring having one or two heteroatoms.

51. A compound according to claim 50 wherein R^7 and R^8 together with the nitrogen atom form a saturated heterocyclic ring selected from morpholino, piperidino, piperazino and pyrrolidino.

52. A compound according to claim 51 wherein R^7 is hydrogen and R^8 is hydrogen or methyl.

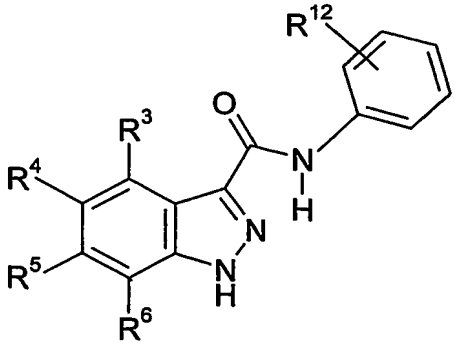
53. A compound of the formula (VI):



(VI)

wherein R^3 to R^6 and A are as defined in any one of the preceding claims and Het' is a heterocylic group having from 3 to 7 ring members.

54. A compound of the formula (V):



(VII)

wherein R^3 to R^6 are as defined in any one of the preceding claims, and R^{12} represents hydrogen or one or more substituents selected from halogen, C_{1-4} alkyl, C_{1-4} alkoxy, trifluoromethyl and trifluoromethoxy.

55. A compound according to claim 54 wherein R^{12} represents hydrogen or one or two fluorine atoms, preferably one fluorine atom.

56. A compound according to any one of the preceding claims wherein when A is R^2 and R^2 is an aryl group having 6 ring members and bearing a C_{1-6} alkyl or halogen substituent in the *para* position, the group B-R^1 is other than an unsubstituted or substituted benzamido group located at the *meta* position of the aryl group.

57. A compound according to any one of the preceding claims wherein when A is R^2 and R^2 is an aryl group having 6 ring members, the group B-R^1 is other than a substituted phenyl carbamoyl group located at the *meta* position of the aryl group wherein the substituted phenyl carbamoyl group bears a C_{1-6} alkyl or halogen substituent in the *ortho* position and an amido group in the *para* position.

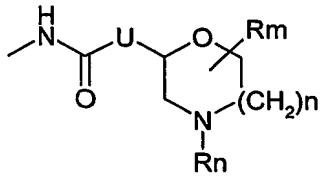
58. A compound according to any one of the preceding claims wherein the fused heterocyclic group, formed by two adjacent moieties selected from R^3, R^4, R^5 and R^6 together with the carbon atoms to which they are attached, is other than a 1,2,3-triazolo ring.

59. A compound according to any one of the preceding claims which is other than a compound containing a 3-aminocarbonyl-2-carboxamido-thiophene moiety.

60. A compound according to any one of the preceding claims wherein E is NH and G is an aryl or heteroaryl group selected from five or six membered heteroaryl groups, phenyl, quinolinyl and isoquinolinyl groups, and the said

aryl or heteroaryl group bears a substituent other than C_{1-6} alkyl, halogen, CF_3, NR^xR^y and OR^z where R^x, R^y and R^z are independently hydrogen, C_{1-6} alkyl or aryl-C_{1-6} alkyl.

61. A compound according to any one of the preceding claims wherein the group E-G is not a group of the formula:



wherein U is an alkylene group, Rm is hydrogen or an alkyl group, Rn is aryl, alkyl or arylalkyl and n is 1 or 2.

62. A compound according to any one of the preceding claims in the form of a salt or solvate (such as a hydrate).

63. A compound according to any one of the preceding claims in the form of an N-oxide.

64. A compound as defined in any one of claims 1 to 63 for use in the prophylaxis or treatment of a disease state or condition mediated by a cyclin dependent kinase.

65. The use of a compound as defined in any one of claims 1 to 63 for the manufacture of a medicament for the prophylaxis or treatment of a disease state or condition mediated by a cyclin dependent kinase.

66. A method for the prophylaxis or treatment of a disease state or condition mediated by a cyclin dependent kinase, which method comprises administering to a subject in need thereof a compound as defined in any one of claims 1 to 63.

67. A method for treating a disease or condition comprising or arising from abnormal cell growth in a mammal, which method comprises administering to the mammal a compound as defined in any one of claims 1 to 63 in an amount effective in inhibiting abnormal cell growth.

68. A method for treating a disease or condition comprising or arising from abnormal cell growth in a mammal, the method comprising administering to the mammal a compound as defined in any one of claims 1 to 63 in an amount effective to inhibit CDK2 activity.

69. A method of inhibiting a cyclin dependent kinase, which method comprises contacting the kinase with a kinase-inhibiting compound as defined in any one of claims 1 to 63.

70. A method of modulating a cellular process (for example cell division) by inhibiting the activity of a cyclin dependent kinase using a compound as defined in any one of claims 1 to 63.

71. A pharmaceutical composition comprising a novel compound as defined in any one of claims 1 to 63 and a pharmaceutically acceptable carrier.

72. A compound as defined in any one of claims 1 to 63 for use in medicine.

73. A compound accaccording any one of claims 1 to 63 for use an an antifungal agent.